

## **REMARKS**

By this amendment, claims 1-51 are pending, in which which no claim is canceled, withdrawn, currently amended, or newly added.

The final Office Action mailed May 3, 2004 rejected claims 1, 2, 6, 7, 10-12, 16, 18, 19, 23, 24, 27-29, 33, 35, 36, 40, 41, and 44-46 as obvious under 35 U.S.C. § 103 based on *Prieto, Jr. et al.* (US 6,381,228) in view of *Montpetit* (US 6,366,761), claims 3, 4, 20, 21, 37, and 38 as obvious under 35 U.S.C. § 103 based on *Prieto, Jr. et al.* in view of *Montpetit* and in further view of *Leung* (US 6,574,231), claims 5, 22, and 39 as obvious under 35 U.S.C. § 103 based on *Prieto, Jr. et al.* in view of *Montpetit* and in further view of *Leung* and *Fan et al.* (US 6,424,622), claims 8, 9, 25, 26, 42, and 43 as obvious under 35 U.S.C. § 103 based on *Prieto, Jr. et al.* in view of *Montpetit* and in further view of *Turner* (US 4,849,968), claims 13, 14, 30, 31, 47, and 48 as obvious under 35 U.S.C. § 103 based on *Prieto, Jr. et al.* in view of *Montpetit* and in further view of *Charvillat* (US 5,315,586), claims 15, 32, and 49 as obvious under 35 U.S.C. § 103 based on *Prieto, Jr. et al.* in view of *Montpetit* and in further view of *Haulin* (US 5,502,988), and claims 17, 34, and 51 as obvious under 35 U.S.C. § 103 based on *Prieto, Jr. et al.* in view of *Montpetit* and in further view of *Filipiak et al.* (US 5,193,090).

Independent claims 1 and 35 recite **"moving the bandwidth request from the one global queue to one of a plurality of local queues**, the plurality of local queues corresponding to the plurality of channels, wherein the bandwidth request is moved **based on loading of the channels.**" Independent claim 18 recites "a plurality of local queues coupled to the BCP, the plurality of local queues corresponding to the plurality of channels, **one of the plurality of local queues storing the bandwidth request is moved from the one global queue based on loading of the channels.**"

The Examiner maintains that these features are met by the same art as applied in the prior Office Action dated December 22, 2003, arguing that "RQM request's for the channel is moved/transferred according to the loading/fill level/utilization of the rates/bandwidth/channels," and citing col. 9: 1-9 and 46-59. Applicants disagree, as the interpretation adopted by the Examiner has no factual basis in the reference of *Prieto, Jr. et al.* Col. 9: 1-9 of *Prieto, Jr. et al.* discloses the following:

The HUFs enables the dynamic partitioning of the uplink bandwidth into wholesale and retail components, while ensuring that unused bandwidth is reapportioned to backlogged wholesalers and retailers. In other words, the HUFs sets the priority for a reservation grant based on the type and service class of user, i.e. wholesaler, retailer, independent etc., and reapportions the available

bandwidth to the lower priority users when the higher priority users are not actually using the bandwidth.

This passage makes no mention of how the requests are moved from the wholesaler to the retailer.

The other cited passage, col. 9: 46-59, states the following (*Emphasis Added*):

As shown, some of the wholesalers 58 are backlogged with retailers 60 waiting for service by the PFQ scheduler. **The PFQ scheduler calculates cost functions based on subscription rate and bandwidth utilized in the past.** The resulting metric is used for determining a winner by sorting. The winner of the competition will herein be called the "highest priority." The highest priority wholesaler that includes the retailers 60 waiting for service is selected in a first stage, and the highest priority retailer 60 of the selected wholesaler 58 is determined in a second stage. An RGM message is generated by the MAC controller after a winner has been selected at service time.

The above passage of *Prieto, Jr. et al.* merely discloses that the PFQ algorithm selects a wholesaler based on past subscription rate and past utilization of bandwidth. First, the PFQ algorithm is not executed to "move" a request (e.g., RQM) from the wholesaler to the retailer, but for selecting a highest priority wholesaler. Secondly, past utilization of bandwidth is not "loading of the channels." Third, at best, the utilization of bandwidth pertains to a particular channel.

The above construction is consistent with the operation of the *Prieto, Jr. et al.* system. Namely, the reference unequivocally states that the two stages of the HUFS algorithm are "independent and unique for each uplink band" (col. 9: 29-31). *Prieto, Jr. et al.* on col. 9: 25-37 discloses the following operation:

The basic HUFS algorithm is divided into two stages, although any number of stages may be used to expand the service. **The first stage provides wholesale user selection and the second stage provides retail user selection.** Both stages employ a form of packet fair queuing (PFQ), such as the starting potential fair queuing (SPFQ) algorithm. **The first and second stages are independent and unique for each uplink band.** The first stage queues are actually virtual queues storing the state of each wholesaler group and may be either backlogged or idle. The second stage queue is a virtual queue storing fixed sized virtual packets representing a number of some quanta of uplink bandwidth desired by the retail user connection.

The above passage further reveals that the queues do not in fact store "requests" that are moved between the two stages. In fact, the respective queues of these two stages store different information. As seen above, the first stage queues (which the Examiner equates to the

“global queue”) store state information – e.g., “backlogged” or “idle.” The second stage queues (which the Examiner equates to the “local queue”) store packets representing the number of desired quanta of uplink bandwidth. The ATM reservation request cells 54 (i.e., RQMs) are stored in the uplink bands 52 (FIG. 4). These RQMs are not moved within the stages.

The deficiencies of *Prieto, Jr. et al.* are not cured by the addition of *Montpetit*, which is applied for a supposed teaching of “global queues corresponding to a data rate” (page 4 of the Office Action).

The secondary reference of *Montpetit* is similarly devoid of this feature. *Montpetit* discloses the use of four levels of priority status, P1, P2, P3, and P4, and that “bandwidth for uplink transmission of a data packet to a servicing satellite overhead is allocated based on the data packet’s assigned priority status” (col. 6, lines 56-58; see also, col. 5, lines 43-61).

The other references of *Leung, Fan et al.*, *Charvillat*, and *Filipiak et al.*, which were applied for supposed teachings of the various dependent claims, fail to satisfy the above claim features.

Furthermore, Applicants maintain (as previously proffered) that a *prima facie* case of obviousness has not been established, as it is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d, 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). For example, *Prieto, Jr. et al.*, in col. 2, lines 36-47, recognizes the problem with controlling reservations from a central terrestrial location, such as a Network Operations Center (NOC), noting that wasteful trips to the satellite are required. Thus, the *Prieto, Jr. et al.* system provides, as an objective, an onboard demand assigned multiple access (DAMA) protocol for use in connection with a processing satellite communications network (col. 2, lines 61-65). In operation, the DAMA controller on the satellite receives a reservation query message (RQM) and buffers the requests into priority-class queues. In stark contrast, the *Montpetit* system contemplates maintaining queues at a terrestrial location. It is clear that the *Montpetit* system employs a queuing mechanism at a terrestrial location. However, this notion of a terrestrial based mechanism is taught away by *Prieto, Jr. et al.*, which utilizes an onboard mechanism. Thus, the proposed combination of *Prieto, Jr. et al.* and *Montpetit* is unsustainable.

The Office Action, on page 77, asserts that the features of “terrestrial location and onboard mechanism” are not recited in the rejected claims. The Examiner misunderstands the reasoning for the non-combinability of the two references of *Prieto, Jr. et al.* and *Montpetit*; in other words, the language of terrestrial location and onboard mechanism are discussed in the context of the *Prieto, Jr. et al.* and *Montpetit* references to demonstrate that the Examiner’s

proposed modification of the *Prieto, Jr. et al.* system based on the teachings of *Montpetit* is without technical or legal merit. Applicants are not attempting to suggest that such language is indicative of the claimed features.

Accordingly, Applicants respectfully urge the indication that independent claims 1, 18, and 35 are allowable. Claims 2-17, 19-34, and 36-51, depending correspondingly from these independent claims, are also allowable. These dependent claims are further patentable on their own merits. For example, dependent claim 3 recites "filling the one local queue with subsequent rate requests up to a queuing threshold; and filling another one of the local queues with additional rate requests upon filling the one local queue beyond the queuing threshold." After acknowledging the *Prieto, Jr. et al.* and *Montpetit* do not satisfy these features, the Examiner applies *Leung*, apparently equating the claimed queuing threshold with "space in the storage location in the memory" (Office Action, page 13). Applicants assert that one of ordinary skill in the art would not reasonably consider constraint of the memory space or size as a "queuing threshold." Also, dependent claim 13 recites "moving the rate requests from the local queues to the corresponding global queues for reallocation in response to the defragmentation command." The Examiner is forced to rely on a third reference of *Charvillat* for a supposed teaching of a "defragmentation command and reallocation in response to the defragmentation command" (Office Action, page 21). However, as noted earlier, the base reference of *Prieto, Jr. et al.* does not provide for any capability to move requests, much less in the manner claimed.

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (301) 428-7172 so that such issues may be resolved as expeditiously as possible. (Original) All correspondence should continue to be directed to our below-listed address.

Respectfully Submitted,



Craig Plastrik  
Reg. No. 41,254

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THE DIRECTV GROUP, INC.  
(formerly Hughes Electronics Corporation)  
Customer No. 20991